

Bragg Gratings," *IEEE Journal of Selected Topics In Quantum Electronics*, Vol. 5, No. 5 ("Willner"). Applicants respectfully traverse the instant rejections.

"To establish prima facie obviousness of a claimed invention, *all the claim limitations* must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03. Emphasis added.

Independent claim 1 recites in pertinent part, "directing an optical beam into a first end of an optical path having the first end and a second end *disposed in a semiconductor substrate....*" Emphasis added. Applicants submit that neither Erdogan nor Willner disclose, teach, or fairly suggest an optical path having first and second ends disposed in a semiconductor substrate.

In fact, as the titles of both Erdogan and Willner suggest, both arts relate to "fiber" gratings and fail to teach optical paths having first and second ends disposed in a "semiconductor substrate." Erdogan states, "[i]n this paper, we focus on the optical properties of *fiber* phase gratings...." Erdogan, Introduction, paragraph 2. Emphasis added. Willner states, "[w]e utilize a dispersive nonlinearly chirped *fiber Bragg grating (FBG)* whose dispersion can be varied continuously over a wide range by tuning a single mechanical stretching element." Willner, Introduction, paragraph 2. Emphasis added. Applicants have been unable to find any teaching or suggestion within Erdogan or Willner of an optical path having first and second ends disposed in a semiconductor substrate.

Consequently, all claim limitations of claim 1 are not taught or suggested by Erdogan and Willner, either alone or in combination, as required under M.P.E.P. § 2143.03. Accordingly, Applicants respectfully request that the instant § 103(a) rejection of independent claim 1 be withdrawn.

Additionally, the Examiner rejected one or more of dependent claims 4-6 and 8 under 35 U.S.C. § 103(a) as being unpatentable, further citing U.S. Patent No.: 6,363, 202 B1 to Goodfellow ("Goodfellow") and U.S. Patent No." 6,480,513

B1 to Kapany et al. ("Kapany"). Both Goodfellow and Kapany also fail to disclose, teach, or fairly suggest an optical path having first and second ends disposed in a semiconductor substrate.

In fact, Goodfellow discloses, "[a]dvantageously, the filter will be formed in low loss *fiber*...." Goodfellow, col. 4, lines 50-51. Emphasis added. Kapany discloses,

FIGS. 4A and 4B are schematic transverse and longitudinal sectional views showing a particular structure that generates an acoustic standing wave with the *fiber* core (i.e., the grating portion of the waveguide) located at the node of the acoustic standing wave. In particular, the *fiber* is shown as having a core 47 and a cladding 48, with a metal layer 50 deposited on the outside of the *fiber*...

Kapany, col. 4, line 66 through col. 5, line 5. Emphasis added. Consequently, Goodfellow and Kapany also fail to teach or suggest an optical path having first and second ends disposed in a semiconductor substrate. Thus, dependent claims 2-9 are nonobvious over the prior art of record for at least the same reason as discussed above in connection with independent claim 1, in addition to adding further limitations of their own. Accordingly, Applicants respectfully request that the instant §103(a) rejections for claims 2-9 be withdrawn.

### CONCLUSION

In view of the foregoing remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

## CHARGE DEPOSIT ACCOUNT


It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

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Date:

March 24, 2003

  
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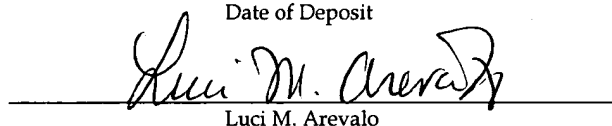
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